



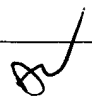
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,122	12/10/2003	Pei-Hsiung Liu	FP9283	4662
7590	11/02/2004		EXAMINER	
Leong C. LEI PMB#1008 1867 Ygnacio Valley Rd. Walnut Creek, CA 94598			VERBITSKY, GAIL KAPLAN	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/731,122	LIU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Gail Verbitsky	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-2, 4 are objected to because of the following informalities:

Claim 1: Perhaps applicant should insert --in-- before "an upright" in line 6,

Claim 2: Perhaps applicant should replace "(ball)" with --or ball--, because no parenthesis are allowed in the claims,

Claim 4: Perhaps applicant should insert --duration-- after "time" in line 3 in order to clearly describe the invention. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al. (U.S. 6669362) [hereinafter Lin].

Lin discloses in Figs. 2-5 an electronic thermometer with a directionally adjustable display, the thermometer having a control circuit, a display, a direction sensing element such that when the thermometer is in upright position facing a user, the user can see the data on the display which is shown upright also, when the thermometer position is reversed, the display receives a signal from the direction

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sensing element and again produces an upright data on the display comfortably seen and readable by the user. Lin teaches that the direction sensing element is a roller/ ball (vibration) switch/ mercury switch/ manually switched button/ key. When the switch is on, the control circuit outputs a signal to the display to produce an upright display characters readable to the user.

It is inherent, that display can identify the signals sent from the direction-sensing element and has identifiable characters, which can be identified as upright, and be readable independent whether the thermometer is upright or reversed. It is also inherent, that the display has some circuit (circuits) responding to direction related signals from the direction sensing device/ control circuit.

With respect to "whereby"/"thereby", as stated in claim 3: it has been held that the functional "whereby" statement does not define any structure and accordingly cannot serve to distinguish. In re Mason, 114 USPQ 127, 44 CCPA 937 (1957).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Kim (U.S. 20030012360).

Lin discloses the device as stated above in paragraph 3.

Lin does not explicitly teach the limitations of claim 4.

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Kim teaches a switch control that can be a combination of the number of times keys (switch) is depressed or the duration of time the key is depressed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the direction sensing element, disclosed by Lin, so as to control it with a combination of numbers and time duration of depressing, as taught by Kim, so as to enable the element to distinguish between different commands, in order to allow a proper operation of the device.

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Woods (U.S. 6087936).

Lin discloses the device as stated above in paragraph 3.

Lin does not explicitly teach the limitations of claims 5-7.

Woods discloses in Figs. 10-13 a vibration ball/ roller 170 sensor positioned on a control/ printed board 155. The sensor has an end contact 156, which is connected to terminals 164/ 168 and then to terminals 12, 14 of a device to be controlled (alarm). As shown in Figs. 11-12, the terminals are protruding through the holes in the housing/ printed board.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the direction sensing element, disclosed by Lin, so as to position it on the printed board, and to have foils protruding through the holes, and ball on the fixed rail provided on the foil, as taught by Woods, so as to provide the direction sensing element with a proper functioning.

For claims 6-7: the use of the particular material, i.e., gold foil, as stated in claims 6-7, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the device, disclosed by Lin since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

7. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Higgins et al. (U.S. 20040084290) [hereinafter Higgins].

Lin discloses the device as stated above in paragraph 3.

Lin does not explicitly teach the limitations of claims 5-7.

Higgins discloses in Figs. 1 a direction sensing device/ tilt switch in the field of applicant's endeavor comprising a housing 120 and a ball 160 placed onto a circuit board/ printed board, the ball rolls within a cavity/ fixed rail formed on conductive members/ foils 142 and 152. The conductive members protrude from the housing/ circuit board/ printed board through holes (apertures) 122a and 124a and connected to a responding device (meter) (paragraphs [0032]- [0039]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the direction sensing element, disclosed by Lin, so as to position it on the printed board, and to have foils protruding through the holes,

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and ball on the fixed rail provided on the foil, as taught by Higgins, so as to provide the direction sensing element with a proper functioning.

For claims 6-7: the use of the particular material, i.e., gold foil, as stated in claims 6-7, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the device, disclosed by Lin since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

8. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Bitko (U.S. 4099040).

Lin discloses the device as stated above in paragraph 3.

Lin does not explicitly teach the limitations of claims 5-7.

Bitko discloses in Figs. 1-11 a mercury type tilt (direction/ angle) switch comprising a ball/ roller 40 positioned on a circuit board (figs. 4, 4a, col. 3, lines 33-36) and rolling along a slope/ fixed path/ fixed rail provided on the top of spaced electrodes (foils) 36, and, depending on the sensed direction (angle) making contacts with the spaced electrodes (foils) 36 that extends through holes in a housing and thus, in the circuit board and depending on the direction, the electrodes contact/ activate an LCD. This would imply, that both electrodes are connected to the LCD circuit (circuits), and the LCD circuit will respond accordingly to the signal (no signal).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the direction sensing element, disclosed by Lin, so as to position it on the printed board, and to have foils protruding through the holes, and ball on the fixed rail provided on the foil, as taught by Bitko, so as to provide the direction sensing element with a proper functioning.

For claims 6-7: the use of the particular material, i.e., gold foil, as stated in claims 6-7, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the device, disclosed by Lin since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

### **Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800



October 21, 2004